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Conference Abstract

Practical Examples of Cooperation and of Visualizing Species Information: Species identification and invasive alien species (IAS)

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Abstract

The SLU Swedish Species Information Centre (SSIC, SLU Artdatabanken) accumulates, analyses and disseminates information concerning species and habitats occurring in Sweden. The work is frequently carried out in cooperation with various experts and non-governmental organisations. The SSIC produces the Swedish Red List of threatened species and works on commission by the Government and other authorities within the field of Swedish biodiversity, *e.g.* risk assessment of invasive alien species (IAS) and the Habitats Directive. Since 2002, when the Swedish Taxonomy Initiative (STI) was established, the SSIC is commissioned by the Swedish Parliament to identify and describe all species of multicellular plants, fungi and animals in Sweden and to make the information available to scientists, conservationists and the public. The SSIC provides an open access biodiversity reporting and analysis infrastructure including for example the Swedish Species Observation System, the Swedish taxonomic backbone Dyntaxa and tools for species information including traits, terminology and species identification (artfakta.se). All systems, including the Swedish LifeWatch (SLW) Analysis Portal, rely on recognized standards to ensure interoperability and consist of databases, APIs and web applications. In addition, the SSIC was the leading partner within the former SLW consortium and now

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cooperates in the Swedish Biodiversity Data Infrastructure and the Living Atlases Community.

In the first example we show what data from *Hygrophorus*, one of the genera where taxon concepts are mapped within Fennoscandia, is available in the SSIC web applications and hence what kind of data could be shared, based on the ongoing collaboration within the Nordic Taxonomy Initiatives. The *Hygrophorus* data consists of a identification key, descript ions (characters, distribution, ecology), names & classification, nature conservation lists (for red listed species descriptions of threats, conservation measures and assessments). Furtheremore, there are different classfications for filter functions (*e.g.* landscape type, habitat, substrate, ecological group, mycorrhiza/symbiosis), an image gallery and observati on maps generated from sightings. Most come from Artportalen, which in total contains more than 93,000,000 georeferenced observations, along with 3,000,000 images, videos or sounds of some 37,000 species from Sweden. Observation records are harvested by the national Species Observation System (SOS) (serving, amongst others, the Swedish authorities with data) and by the Global Biodiversity Information Facility (GBIF). The SSIC also offers tool for image-based species identification, collaborating with PlantNet and Artsoraklet/Naturalis.

The second example demonstrates the Swedish network and collaboration on invasive alien species (IAS), which is another example of species information of international interest when it comes to sharing and vizualiazing data. In collaboration with the Swedish Environmental Protection Agency (Naturvårdsverket) and the Swedish Agency for Marine and Water Management (Havs- och vattenmyndigheten) a reporting system focusing firstly on the species listed in the IAS Regulation 1143/2014 (EU) has been developed in Sweden (invasivaarter.nu). Here, anyone can report an observation of one of these species, with information on geographic position, date and a photo. This information will be directed to a network of experts verifying both the species identification and the place, if necessary in dialogue with the reporting individual. Once verified occurrence data is published, responsible authorities (often County Administrative Boards, CABs) can carry out field checks and, if necessary, instigate appropriate eradication measures. A digital catalogue of such eradication methods is under development and collaboration between IAS coordinators in regional CABs is being established. The CABs have a separate tool for documentation of eradication measures and since the beginning of this year the complete digital chain is working, from observation to documentation of eradication measures taken. If/when measures are carried out (by CABs) this information is fed back from the CAB-tool into the database in SSIC where it is possible to search for and visualize this information.

Keywords

LOD, Plinian Core

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